

USING A BASIC SPRAY CHROME KIT

Spray chrome is silver applied to the front of an opaque surface and protected by a transparent top coat.

Our Basic Spray Chrome Kit contains all of the chemicals and tools you need to silver an opaque object without investing in expensive machines or throw-away plastic bottles. The system is durable, portable and better for the environment.

SPRAY CHROME IS NOT PAINT. IT IS A CHEMICAL PROCESS.

THE FOLLOWING PROCEDURES ARE *IMPORTANT*.

- **Cleanliness** - The surface must be absolutely clean, including the edges.
- **Careful measurements** - Too much or too little can make a big difference.
- **Distilled Water** - Use steam distilled, de-ionized or reverse osmosis water. The minerals in tap water or other types of bottled water will ruin the mirror. For a simple way to test your water, see our Knowledge Base page on *Water Purity*.
- **Timing** - Use a timer or a clock with a second hand to time the tinning process.
- **Location** - Mirroring is a wet, odorous process and overspray of the chemicals will happen. Choose your location with this in mind. A warm location gives you better results.
- **Concentration** - Arrange your time so you can work without interruption.

SAFETY

- **Storage** - Store all chemicals in a cool, dark place away from children and pets.
- **Breathing** - Silver mist and Uni-Coat solvents are not good to breathe. Our Kit includes an NIOSH approved respirator. Be sure to adjust the mask to fit firmly but comfortably to your face.
- **Staining** - Silver creates brown stains which can be removed with Silver Remover. Wear rubber gloves and cover your bench with several layers of newspaper.
- **Disposal** - The silvering chemicals contain heavy metals. Follow the instructions in your Waste Treatment Kit – Wetting Agent to keep heavy metals *out of the public sewer system*.

A FEW RULES ABOUT SPRAY CHROME

1. The silver chemistry does *not* work when applied to a bare metal surface. Metal surfaces must be coated with Uni-Coat before the silvering process will work.
2. Silver does not make a dull surface reflective. The surface must look like glass if you want the silver to look like a mirror. One coat of Clear Uni-Coat provides the glassy surface you need.
3. The mirroring process works better with slow, gentle passes-speed is the enemy of perfection.
4. Color is subjective. Colors look different in different light. Color is best judged outdoors in full sunlight. Our tinting recommendations are just recommendations. Clear Uni-Coat is colorless so you can use your practice pieces to create a tinting formula that looks right to you.
5. *Skill is a combination of knowledge and experience. Plan to make numerous practice pieces before you try to spray chrome your masterpiece.*

WORKING WITH CLEAR UNI-COAT

- Clear Uni-Coat is formulated to be used as both a base coat and a top coat. You do not need to tint the base coat – the color of the surface you are silvering has no effect on the results.
- Clear Uni-Coat is not pre-tinted. You can add any solvent-based color or tint that you want. Do not use water-based or alcohol based tints or colorants.
- Clear Uni-Coat dries tack free in 5 to 15 minutes depending on temperature and humidity. Allow it to cure for 24 hours before silvering. Allow the top coat to cure 3 days before wrapping it for shipment or subjecting it to harsh chemicals or heavy abrasion.
- For more information, see our Product Data Sheet.

APPLYING UNI-COAT

- Clear Uni-Coat is supplied ready to use – *do not thin this product*. Thinning harms its gloss and durability.
- Apply *one double wet coat* base coat only. Uni-Coat builds quickly; a single thin coat has better adhesion than multiple coats.
- Clean your spray equipment immediately after use with clean lacquer thinner. Do not allow Uni-Coat to dry in the sprayer.
- Mixed Uni-Coat has a pot life of 4 to 6 hours. Mix only what you need for one day. Pour unused product into a paper cup and allow to dry hard. You can then dispose of it in the solid trash.

SILVERING UNI-COAT BASE COAT

- Allow Uni-Coat to cure for at least 12 to 24 hours before silvering. Leaving it longer – even days or weeks – is fine.
- Wash the dried Uni-Coat surface well with a clean sponge, diluted Liquid Cleaner and warm tap water before silvering to remove accidental fingerprints and dust. Wear gloves at all times to keep the natural oils in your skin from contaminating the surface.
- Rinse off ALL of the wash water with steam-distilled, de-ionized or reverse osmosis water and plan to begin silvering over this clean, wet surface.

USING THE PUMP SPRAY ASSEMBLY

CLEANING THE BOTTLES

Rinse the bottles with steam distilled water before adding fresh silver and reducer. If you find that you have a heavy silver deposit inside, you can clean the bottles with Silver Remover. Be sure to flush the bottles, hoses and wand at least twice with distilled water after cleaning with Silver Remover.

PUMPING THE BOTTLES

To get a good silver layer, you must spray on equal amounts of Silver and Reducer at the same time. To get an equal spray, the bottles *must be fully pressurized*. Pump each bottle until you feel firm resistance – until you cannot push the plunger more than half-way down the rod without forcing it. Do NOT force the pump.

Re-pump both bottles before you begin *each new piece*. Keeping the bottles fully pumped up is the key to getting a good silver deposit. The maximum liquid capacity for each bottle is 500ml. You must leave space in the bottle for the pressurized air.

Release the pressure in both bottles *at the end of every day* to preserve the air and water seals. Hold the blue top firmly in one hand and unscrew the white bottle with the other hand until all the compressed air has escaped.

SHELF LIFE OF MIXED CHEMICALS

Diluted 2-Part Spray Silver and Reducer have a shelf life of about 1 week. Freshly mixed chemicals always work best. Do not mix up more than you can use in a few days.

Diluted Sensitizer for 2-Part Silver (Tinning Solution) has a shelf life of 6 to 8 hours. You must discard all of the old Sensitizer and *mix up fresh Sensitizer every day*.

WETTING AGENT

Add 30 ml of concentrated Wetting Agent to 300 ml of Distilled Water and pour into your labeled trigger spray bottle. Diluted Wetting Agent has an indefinite shelf life.

MEASURING CYLINDERS

Your kit includes three 25 ml measuring cylinders – for the Silver, the Reducer and the Wetting Agent. Mark each cylinder “S”, “R” and “W” with a felt tip pen. Mark the 500 ml cylinder “DW” for distilled water.

STEP-BY-STEP INSTRUCTIONS

Part 1 – Applying Uni-Coat Base Coat

STEP 1 - SET-UP YOUR PAINTING SPRAY AREA



1. Set up a “spray booth” for applying Uni-Coat. It can be as simple as a cardboard box and newspapers to protect your bench.
2. Support the object in a way that easily allows you to turn it to view and spray all sides.
3. Ensure that the area has an active ventilation system to remove vapors.
4. Wear your respirator to prevent breathing the vapors.

STEP 2 - CLEAN THE OBJECT



1. Clean your object carefully with Concentrated Cleaner and dry it carefully. Your object must be clean and dry before applying Uni-Coat.
2. Clean plastic objects with denatured or rubbing alcohol and a soft cloth (not paper towel) to remove any mold release from manufacturing.

STEP 3 - MEASURE AND MIX THE UNI-COAT



1. Use the measuring cup in your Kit to measure out 8 parts (for example 8 fluid ounces) of Clear Uni-Coat Resin. You can measure by weight if you prefer.
2. Add 1 part (for example 1 fluid ounce) of Clear Uni-Coat Hardener.
3. Mix together and pour into the plastic bottle on the Crown Spraying Tool.

STEP 4 - SPRAY ON THE BASE COAT



1. Apply one double wet layer to all surfaces. For best results, do NOT apply a mist coat first.
2. Be careful not to have runs, sags or any dry, misted areas.

STEP 5 - CLEAN YOUR SPRAY GUN



1. When you are done spraying pour all unused material back into you mixing cup.
2. Pour a small amount of clean lacquer thinner (from the hardware store) into the spray bottle.
3. Aim the spray gun at the wall of your spray booth and spray out the Lacquer thinner to clean the gun and spray tip. Do not allow the Uni-Coat to dry in the sprayer.

STEP 6 - ALLOW THE UNI-COAT TO CURE



Set the sprayed part in a dust free area to cure for at least 12 hours.

You can force dry it by allowing it to flash off for 10 minutes and then baking it at 140-200°F for 30 minutes. Allow it to cool completely before proceeding.

Part 2 – Mixing the Chemicals

STEP 1 - SET-UP YOUR SILVERING AREA



1. Silvering (chroming) is a very wet process. Set up an area that is suitable for the size of the object you want to silver. Include a tray to catch the silvering chemicals and rinse water.
2. Support the object in a way the keeps it above the level of any waste chemicals that accumulate.
3. Make sure that you can easily reach the object from all sides.
4. Be aware of overspray.

STEP 2 - MEASURE AND MIX THE SILVER AND REDUCER



1. To open the bottle, hold the blue top and turn the white bottle to avoid twisting the hoses.
2. Measure out 485 ml of Distilled Water and pour it into the Silver bottle.
3. Measure out 15 ml of Concentrated Spray Silver Solution and pour it into the bottle.
4. Close the bottle tight and rock it gently to mix the chemicals.

Repeat this process to measure and mix the Reducer.

STEP 3 - MEASURE AND MIX THE SENSITIZER



1. Use the syringe included with the Sensitizer to measure out 0.5 ml of concentrated Sensitizer.
2. Measure out 250 ml of distilled water.
3. Pour the water into the trigger spray bottle, add the Sensitizer and rock the bottle to mix.
4. Our high volume trigger spray bottle holds 300 ml (10 fluid ounces). Mix up fresh Sensitizer every day.

STEP 4 - MEASURE AND MIX THE WETTING AGENT



1. Measure out 30 ml of Wetting Agent and pour it into your trigger spray bottle.
2. Measure out 300 ml of distilled water.
3. Pour the water into the trigger spray bottle and rock the bottle to mix.

Part 3 – Applying the Silver

STEP 1 - CLEAN THE CURED BASE COAT



1. Wash the surface with Concentrated Liquid Cleaner, hot tap water and a clean sponge or cloth. Do not use paper towel which can scratch plastic.
2. Rinse thoroughly with distilled water.

STEP 2 – FLAME THE BASECOAT



Plastics repel water. You can make the surface wettable by passing the thin blue flame from a propane or butane torch over the dry surface.

For detailed instructions, see **Flaming the Base Coat** in the Knowledge Base section on our website.

To test your flaming process, spray the surface with distilled water. If it beads up anywhere, flame the area again.

STEP 3 – SPRAY ON WETTING AGENT



1. Spray the clean, wet object all over with diluted Wetting Agent.
2. *Do not rinse* off the Wetting Agent before you sensitize the surface.

STEP 4 - SENSITIZE THE SURFACE



1. Spray the surface thoroughly with diluted Sensitizer.
2. Wait about 30 seconds for the Sensitizer to attach.
3. Rinse off all of the unused Sensitizer and Wetting Agent distilled water.
4. You will not be able to rinse off the sensitizing layer. Any excess Sensitizer left on the surface can stain the silver. Be sure to rinse out any crevices or holes.

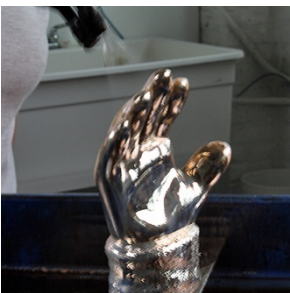
STEP 5 - PUMP UP THE BOTTLES



Grasp the bottle firmly and pump the plunger until you cannot press the plunger more than half-way down.

Be sure to pump up both bottles equally. Do not over pump.

STEP 6 - SILVER THE OBJECT



1. Hold the wand about 1 foot away from the surface.
2. Spray on a single, light, even layer of silver.
3. Wait 10 seconds for the silver to develop and then spray again.
4. Examine the silver to see if a third layer is required.

Spraying on too much silver can produce a white, cloudy surface that can only be repaired by cleaning the piece with Silver Remover and re-silvering it. Light passes with the silver are best.

STEP 7 - RINSE THE SILVER



Rinse the silver very thoroughly with distilled water.

You should be able to touch the silvered surface carefully with clean gloved hands without harming the silver.

STEP 8 - DRY THE SILVER



Set the object aside to dry completely. Do not allow the water to dry in puddles.

FIXING A MISTAKE



If you decide that the silver layer is not good enough, you can easily remove it with Silver Remover.

Mix equal amounts of Silver Remover Parts A and B in a separate container and rub the mix on the silver with cotton ball.

When all the silver is removed, clean the piece with Concentrated Cleaner and rinse it well with distilled water.

Re-silver the piece beginning with Step 3.

Part 4 – Applying the Uni-Coat Top Coat

STEP 1 – TINT THE TOP COAT



Silver metal has an optical property that makes it appear pale gold when it is covered with a clear film. To preserve the white-blue appearance of pure silver, tint the top coat with transparent violet dye.

1. Follow the instructions in Steps 3 and 4 to mix the top coat.
2. Add 2 drops of Uni-Coat Violet Tint to each fluid ounce of Clear Uni-Coat to preserve the chrome color of the silver.
3. Add other tints to create other colors.

STEP 2 - APPLY THE TOP COAT



1. As with the basecoat, apply one double wet layer to all surfaces. For best results, do NOT apply a mist coat first.
2. Be careful not to have runs, sags or any dry, misted areas..
3. Apply additional **untinted** layers of Clear Uni-Coat to increase the durability of the top coat, if desired.

Part 5 – Clean Up

STEP 1 - CLEAN YOUR SPRAY GUN



1. Pour a small amount of clean lacquer thinner (from the hardware store) into the spray bottle.
2. Aim the spray gun at the wall of you spray booth and spray out the Lacquer thinner to clean the gun and spray tip. Do not allow the Uni-Coat to dry in the sprayer.

It is almost impossible to remove dried Clear Uni-Coat from a spray gun.

STEP 2 - PROCESS THE WASTE WATER



Empty the waste chemicals into a waste bucket. Follow the instructions in your Waste Treatment Kit – Wetting Agent.

It is *irresponsible and potentially illegal* to pour heavy metal waste into the public sewer system.

TROUBLESHOOTING GUIDE FOR SPRAY CHROME

How to fix any of these problems: Clean off all of the silver with Silver Remover and start over by re-cleaning and re-tinning the piece. Silver Remover will not harm your base coat, paint, plastic or glass. Be sure to rinse off *all* of the Silver Remover with distilled water.

APPEARANCE	CAUSE	SOLUTION
Gray and speckled	The surface did not “wet” evenly and so the Tin did not deposit evenly	Be sure that the surface is ‘chemically’ clean. Apply a generous amount of diluted Wetting Agent and apply the Sensitizer (Tin) directly over the Wetting Agent. Wetting Agent allows the Sensitizer to attach firmly to the surface. Read Flaming the Base Coat page in our Knowledge Base.
Matte white areas	Too much silver	Hold the wands at least 1 foot away from the surface and spray light, even layers. Rinse very well after silvering. Dilute the silver and Reducer by using 15 ml in 1000 ml instead of 30. This works well in warm environments.
Dark or gray areas	Not enough silver	Examine the piece from all sides in good light and spray a small amount of silver on the dark areas before you dry it.
Yellow or brown stains	Too much Sensitizer	Rinse off the Sensitizer very thoroughly. You will not be able to rinse off the sensitizing layer that attaches to the surface.
Blue areas	Not spraying equal amounts of chemicals	Pump up both bottles fully and equally. Be sure you have mixed the chemicals properly.
Thin and gray	Too little Sensitizer, old Sensitizer or bad water	If the sensitizer looks yellow, it is timed out. Use fresh, clear Sensitizer. See the Water Purity page in our Knowledge Base for a simple way to test the purity of your water
Matte gray all over	Non-glossy substrate	The surface must look like glass if you want the silver to look like a mirror. No amount of silver will make a matte surface look shiny. Clear Uni-Coat provides a glass-like surface.
Pale gold color after top coating	You used a non-tinted top coat	This is a known problem with all clear lacquers. To counteract this effect, you need to tint our Clear Uni-Coat top coat with our light-fast Violet Dye.